CLAIMS

1. A display device, for aeronautical applications, which comprises an electronic computer (2) controlling a display device (1), said display device being organized as a matrix of N rows of M columns of dots, said computer (2) comprising essentially an electronic first assembly (21) for interfacing with the outside, an electronic second assembly (22) for computing and generating images and a third assembly (23) for electrical supply, the display device (1) being structured as two independent display zones (11, 12), the electronic second assembly for computing and generating images being structured as two independent electronic subassemblies (221, 222), characterized in that the third, supply assembly is also structured as two independent electronic subassemblies (231, 232) in such a way that the failure of any one of these various subassemblies entails, at most, the loss of only one of the two display zones (11, 12).

2. The display device as claimed in claim 1, characterized in that the display device (1) is composed of a liquid-crystal active matrix and of a lighting unit (7) composed of aligned fluorescent tubes, said active matrix essentially comprising:

- a first polarizer called the analyzer (40);
- a first glass plate (5) that includes at least one transparent counter-electrode (51);
- a liquid-crystal layer;
- a second glass plate (6) having a matrix of control rows (61) and control columns (62), a switch (63) controlling an elementary electrode (64) being at each intersection of a row with a column;
- a second polarizer (41);

- a first electronic driving assembly located around the periphery of the matrix addressing the control rows; and
- a second electronic driving assembly located around the periphery of the matrix addressing the control columns,

each assembly consisting of the elementary electrode (64), of parts of the liquid-crystal layer and of the transparent counter-electrode (51) that are located above said elementary electrode (64) constituting a dot, the light transmission of each dot depending on the voltages for addressing the control row and the control column of the elementary electrode of said dot.

3. The display device as claimed in either of the preceding claims, characterized in that the two display zones (11, 12) are geometrically separate, with no common overlap area.

4. The display device as claimed in claim 3, characterized in that, for a display device of rectangular shape, the two display zones are also rectangles of identical shape, the area of each of said rectangles being equal to one half of the total area of the display device.

5. The display device as claimed in claims 2 to 4, characterized in that:

- the first electronic assembly for driving the rows of the active matrix comprises two independent subassemblies (661, 662) in such a way that the first subassembly (661) controls the rows (611) of the first zone and the second subassembly (662) controls the rows (612) of the second zone;
- the fluorescent tubes (70) are controlled by two electronic supply subassemblies (71, 72) each dependent on one of the two electronic supply subassemblies (231, 232), the first

(71) of said subassemblies supplying the lighting tubes located beneath the first zone of the display device, the second (72) of said subassemblies supplying the lighting tubes located beneath the second zone of the display device.

6. The display device as claimed in claim 5, characterized in that the first glass plate of the active matrix has two independent counter-electrodes, the first corresponding to the first zone of the display device and the second corresponding to the second zone of said device, said counter-electrodes being each supplied by the two independent supply subassemblies.

7. The display device as claimed in claim 6, characterized in that the first glass plate of the active matrix has a single counter-electrode supplied by the two independent supply subassemblies.

8. The display device as claimed in one of claims 5, 6 and 7, characterized in that each of the two electronic subassemblies (221, 222) possesses an electronic cutoff function allowing the supply for the electronic supply subassemblies (71, 72) for the fluorescent tubes to be cut off; in the event of a failure of any one of the electronic subassemblies or of one of the two display zones (11, 12), causing the loss of one of said display zones, said electronic cutoff function of the electronic subassembly corresponding to said display zone that has failed is activated in such a way that the fluorescent tubes (70) corresponding to this same, lost display zone are automatically switched off.

9. The display device as claimed in claims 5 to 8, characterized in that each of the two electronic subassemblies (221, 222) possesses an electronic

reconfiguration function making it possible to generate only the information essential for flying, called Primary Flight Display, in a format corresponding to one screen half, in such a way that, in the event of failure of any one of the electronic subassemblies or of one of the two display zones (11, 12) causing the loss of one of the two display zones, the electronic reconfiguration function of the electronic subassembly corresponding to the display zone that is still functional is activated.

10. The display device as claimed in claim 2, characterized in that the active matrix comprises two independent subassemblies of dots, each of the two subassemblies being composed of columns of dots controlled by a control column subassembly (621, 622):

- each column subassembly depending on an independent driving subassembly (651, 652), each controlled by one of the two different electronic subassemblies (221, 222) for computing and generating images, the two control column subassemblies being interlaced;
- the control rows (61) common to the two zones being driven on either side of the matrix by two independent driving subassemblies (661, 662) that are each controlled by one of the two different electronic subassemblies (221, 222) for computing and generating images; and
- the two zones being lit by two rows (71, 72) of interlaced fluorescent tubes (70), each of the two rows being supplied by an independent electronic supply subassembly.

11. The display device as claimed in claim 10, characterized in that the control columns (621, 622) are interlaced one column in two.

12. The display device as claimed in claim 10, characterized in that the control columns (621, 622) are interlaced every two control columns.

13. The display device as claimed in claim 10, characterized in that the control columns (621, 622) are interlaced every three control columns.

14. The display device as claimed in claim 10, characterized in that the two driving subassemblies (651, 652) for driving the columns of the active matrix possess an electronic function such that, in the event of loss of one of the two subassemblies of dots making up the active matrix, the control columns for the subassembly of dots that is lost are addressed with a voltage such that the transmission of the dots of said lost subassembly is minimal.

15. The display device as claimed in claim 10, characterized in that the information displayed is composed of characters, the size and the thickness of the lines of which are sufficient so that, in the event of loss of one of the display zones, the information remains easily legible.

16. The display device as claimed in claim 10, characterized in that each of the two electronic subassemblies (221, 222) possesses an electronic control function for controlling the supply of the electronic supply subassemblies (71, 72) for the fluorescent tubes; in the event of loss of one of the two subassemblies of dots making up the active matrix, the two electronic control functions are activated so that the luminance of the fluorescent tubes (70) is automatically doubled.

17. The display device as claimed in claim 10, characterized in that, in the event of loss of one row of lighting tubes (70), the luminance of the tubes of

the row still operating is automatically doubled by the corresponding electronic control function.